



# Interim Forest Management Plan

## State Ice Age Trail Area – Holy Hill

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### Property Identifiers

Property Name and Designation: **STATE ICE AGE TRAIL AREA – HOLY HILL**

Forestry Property Code: **6701**

Property Location – County: **WASHINGTON COUNTY**

Property Acreage: **130**

Master Plan Date: **Master Planning has not been scheduled for this property.**

Property Manager: **Rob Wessberg**

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### Part 1: Property Assessment

#### A. GENERAL PROPERTY DESCRIPTION – MANAGEMENT, ADJACENT LAND USES, TOPOGRAPHY, SOILS, ETC.

The purpose of this and all State Ice Age Trail Areas is to permanently protect lands to provide for segments of the Ice Age Trail; preserve Wisconsin's glacial landscape features and other natural and cultural resources associated with the trail route; and, where possible, offer a primitive atmosphere of relative solitude and perceived remoteness where visitors may experience a quiet connection with nature. In suburban areas or other developed areas, and on smaller parcels of land, not all of the Ice Age Trail Area purposes may be realized; however, they are to be maximized to the degree practicable at the site.

In Washington County, a large kame field stretches across the landscape, and the Basilica at Holy Hill (adjacent to the DNR property) is built on top of one of these kames. The landscape around the State Ice Age Trail Area - Holy Hill is a complex of agriculture, woodlots, homes on large lots, and some large wetlands and lakes. The forest on this property is part of a larger hardwood forest that extends onto the Holy Hill National Shrine and Basilica to the southeast and onto other private property roughly a quarter mile to the east and west. Large closed canopy forests with coarse woody debris and uneven aged stands attract interior birds such as the Hooded Warbler and Scarlet Tanager.

About 83% of the Holy Hill SIATA has been typed as forest. Of that, about 30 acres are considered to be good quality southern dry-mesic forest. Ephemeral ponds are scattered throughout the property; they provide important breeding habitat for invertebrates and amphibians.

Soils for the area are characterized by well drained and somewhat excessively drained silty and loamy soils with a silt loam or loam surface over calcareous gravelly sand outwash. On site, many of the slopes, which range from 2 to 30%, are classified as eroded.

The majority of Holy Hill SIATA was acquired in 2005. Prior to purchase, row crops were grown on some of the property, and some conifer stands were planted. Old home sites are present on the tract. The property is bisected, east-west, by State Highway 167. A segment of the Ice Age National Scenic Trail passes north and south, through Holy Hill SIATA. The glacial landscape provides a quality experience for the hiker meandering through, with an elevated view of the forest, displaying a spectacular view of fall color.

The property is open for most hunting and trapping activities. Please see the WI DNR website (<https://dnr.wi.gov>) for details.



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### B. ECOLOGICAL LANDSCAPE DESCRIPTION AND PROPERTY CONTEXT

This property is located within the Southeast Glacial Plains Ecological Landscape (EL). The dominant landforms in this EL are glacial till plains and moraines composed mostly of materials deposited during the Wisconsin Ice Age. Other glacial landforms, including drumlins, outwash plains, eskers, kames, and kettles are also well-represented. Soils tend to be lime-rich tills overlain by silt-loam loess. Historically the landscape provided a mixture of prairie, oak forests and savanna and maple basswood forests. End moraines and drumlins largely supported savannas and forests. Wet-mesic prairies, southern sedge meadows, emergent marshes, and calcareous fens are also found within the landscape. Mid 1800's land-cover around the property likely consisted of marsh/sedge meadow and a mixture of oak openings and oak woodlands. In terms of hydrology and aquatic productivity, this Ecological Landscape is among the highest in the state. Major river systems include the Wolf, Bark, Rock, Fox, Milwaukee, Sugar, Mukwonago, and Sheboygan, and several lake chains also exist. Extensive marshes, fens, sedge meadows, wet prairies, tamarack swamps, and floodplain forests are also significant features found within this landscape. The SIATA-Holy Hill site lies within the Oconomowoc River Watershed within the Upper Rock River Basin. The rapid and cumulative effect of urbanization within the watershed threatens water quality, and the Oconomowoc River was selected as a priority watershed in 1983. The property lies within the Oconomowoc Lakes LTA (222Ke10) where the characteristic landform pattern is undulating outwash plain with many lakes and scattered morainic knolls.

Since Euro-American settlement, large portions of the Southeast Glacial Plains have been intensively developed for agricultural or urban-industrial uses, significantly altering the historical vegetation. The hydrology of this Ecological Landscape has been greatly altered and affected by modifications (ditching, diking, tiling), grazing, invasive plants, excessive inputs of sediment- and nutrient-laden runoff from croplands, and human development. Remaining forests today occupy only about 10% of the land area and consist of maple-basswood, lowland hardwoods, and oak. Most of the rare or natural communities that remain are associated with large moraines or in areas where the Niagara Escarpment occurs close to the surface.

### C. CURRENT FOREST TYPES, SIZE CLASSES AND SUCCESSIONAL STAGES

The Holy Hill State Ice Age Trail Area is mix of upland hardwoods, conifer plantations, and grasslands.

- **Northern Hardwoods:** 45 acres (35% of total acreage). The majority of the stand (37 acres) is typed as large sawlogs (15"+/5-11"), 1 acre as small sawlog (11-15"/5-11"), and 7 acres poles and saplings (5-11"/0-5"). Dominant trees are sugar and red maple and white ash.
- **Central Hardwoods:** 49 acres (38% of total acreage) in three stands. 8 acres small sawlogs and 41 acres saplings/seedlings. Dominant woody species are cherry, elm, green ash, and box elder. Dates of origin are between 1971 and 2000.
- **Conifer (white pine and white spruce) plantations:** 11 acres total in four stands (9% of total acreage). 7 acres small sawlogs, 3 acres poles, 1 acre saplings/seedlings. Dates of origin are between 1960 and 1994.
- **Aspen:** 3 acres (2% of total acreage). All small sawlogs. Date of origin 1959. Poletimeber-sized understory present, including a mix of species (sugar and red maple, white ash and basswood).



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### D. NHI: ENDANGERED, THREATENED, SPECIAL CONCERN SPECIES, SPECIES OF GREATEST CONSERVATION NEED (SGCN)

Three rare birds (all Threatened) and two natural community types (ephemeral ponds and southern dry-mesic forest) have been documented within a two mile buffer of the property. NHI screening protocols will be conducted and species guidance protocols will be followed prior to and during any future management activities.

### E. WILDLIFE ACTION PLAN CONSERVATION OPPORTUNITY AREAS (COA)

As identified in the 2005 Wisconsin Wildlife Action Plan, the property is located at the edge of the Mid to Northern Kettle Moraine Conservation Opportunity Area which is recognized as having Continental Significance because of the complexes of uplands, wetlands, and rivers in the area.

### F. SIGNIFICANT CULTURAL OR ARCHEOLOGICAL FEATURES

According to the Wisconsin Historical Society database, a historical site has been identified by the Wisconsin Historical Society. Standard procedure calls for known sites to be protected during forest management operations.

### G. INVASIVE SPECIES

The property has invasive non-native species present. Garlic mustard is fairly abundant. Common buckthorn and bush honeysuckles are present in northern hardwood stands, though not extensively so. Buckthorn and honeysuckle tend to be more common in more open hardwood stands and in conifer stands that have been thinned.

### H. EXISTING STATE NATURAL AREAS (SNA) DESIGNATIONS/NATURAL COMMUNITY TYPES LIMITED IN THE LANDSCAPE

No State Natural Areas are present at this site. The site includes some good examples of **High Value Conservation Forests (HCVF)** Southern Forest types (older closed canopy forests dominated by larger diameter sugar maple, hickory, ash, black cherry, elm, red and white oak).

### I. PRIMARY PUBLIC USES (RECREATION)

This State Ice Age Trail Area property was acquired to permanently protect lands to provide for a segment of the Ice Age National Scenic Trail which winds its way through the state for more than 1,000 miles, following the edge of the last continental glacier in Wisconsin. The purpose of the Ice Age Trail is to provide premier hiking and backpacking experiences and to preserve and interpret Wisconsin's glacial landscape and other natural and cultural resources in areas through which the trail passes (NR 1.29(2)(a), Wis. Admin. Code). The property is open for some hunting and trapping activities. Please see the DNR website (<http://dnr.wi.gov>) for details.

### J. BIOTIC INVENTORY STATUS

Biotic inventory was completed in 2011 and is posted to the DNR website at: [http://dnr.wi.gov/files/PDF/pubs/er/ER0825\\_ext.pdf](http://dnr.wi.gov/files/PDF/pubs/er/ER0825_ext.pdf)

### K. DEFERRAL/CONSULTATION AREA DESIGNATIONS

One consultation area designation is designated at this site. For Consultation sites, there is a range of activities that might occur from completely passive management to intensive timber harvest, but, in every case, the interdisciplinary team first determines that the activities will not limit or remove options for the master plan.



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### Part 2: Future Management – IFMP components

#### **FOREST MANAGEMENT OBJECTIVES** *(Outline primary forest management objectives)*

With all forest management objectives, there are several more universal objectives that can be attained including options such as increasing large snags and coarse woody debris, controlling the spread of invasive plant species and consideration for Wildlife Action Plan priorities and management of SGCNs. Integrating Priority Actions from Wisconsin's 2005-2015 Wildlife Action Plan to the extent possible within framework of this document, or avoiding actions that might preclude successful implementation of these actions in the future is recommended.

#### **Property Management Objectives:**

Ice Age Trail areas (NR 1.29, Wis. Admin. Code) permanently protect lands to provide for segments of the Ice Age Trail; preserve Wisconsin's glacial landscape features and other natural and cultural resources associated with the trail route; and, where possible, offer a primitive atmosphere of relative solitude and perceived remoteness where visitors may experience a quiet connection with nature.

#### **Vegetation Management Objectives:**

Native community types existing at the time of acquisition shall be retained or enhanced.

- 1) Vegetative management shall focus on enhancing the scenic and natural values along the Ice Age Trail. Cropped lands may be planted with a permanent grass cover. Tree plantations may be thinned to create a more natural appearing condition.
- 2) Invasive species may be removed or controlled.
- 3) Any proposed forest management requires consultation with the managing bureau of the property to ensure that scenic values along the Ice Age Trail are being preserved or enhanced.

Throughout, it is recognized that one of the primary objectives of forest management on this and other WDNR properties is to promote and care for the overall health of the forest over the long term.

#### **PROPERTY PRESCRIPTIONS** *(Identify specific and pertinent prescriptions by area or forest type, including passive management areas, extended rotation, and other information that will help achieve the objectives)*

**ALL STANDS** – The Wildlife Action Plan describes Priority Conservation Actions that make effective use of limited resources and address multiple species with each action. All proposed forestry prescriptions should reference Priority Conservation Actions, Wildlife Action Plan priorities, property objectives and be based on individual stand level needs.

Protection of trails on the property and SIATA objectives will be taken into consideration with all forest management prescriptions.

- 1) **Northern Hardwoods:** These areas will be managed using selection harvesting and uneven-aged management with a goal of promoting a desirable mix of tree species and maintaining an all-aged stand character. Oak and hickory largely will not be removed and will be favored as much as possible to promote wildlife benefit. Good quality sugar and red maple and basswood may also be encouraged in the stand. Additionally, efforts will be made to leave some large maples and basswood (e.g., those not in suitable form for commercial use, those with open grown form, etc.) as wildlife habitat trees. Ash may be selected for removal when marking timber harvests due to emerald ash borer (EAB) concerns although no effort will be made to eradicate ash from these stands. Healthy, vigorous young ash will be left throughout the area. Care will be taken to manage non-native invasive woody species, preferably prior to harvest.
- 2) **Central Hardwoods:** Management in these areas will involve harvesting of merchantable size box elder and elm, brush control using a combination of cutting or mowing and herbicide, and planting desirable native tree species (especially white and red oaks) in open areas. As in the Northern Hardwood stands, oak and hickory will be left and promoted as much as possible. Care will be taken to manage non-native invasive woody species, preferably prior to harvest.



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- 3) **Conifer plantations:** Periodic thinning will be used to promote the health and vigor of these stands. An extended rotation will be followed with aesthetics being a primary objective for this area. A mix of white pine and white spruce will be favored, with any red pine being transitioned to white pine or spruce.
- 4) **Aspen:** The aspen will be harvested from this stand along with any elm and box elder, allowing the quality hardwoods present in the understory to assume dominance of this stand.

### SUMMARY OF PUBLIC INVOLVEMENT AND COMMENTS RECEIVED

#### MAPS (Optional)

- a. Property Boundary and ownership Maps
- b. Forest Cover Type Maps (see last page of document)

#### PREPARED BY:

*Mark Wandy*  
 \_\_\_\_\_  
 Property Manager

*6/23/2014*  
 \_\_\_\_\_  
 Date

#### APPROVED:

*Jason Fritz*  
 \_\_\_\_\_  
 Area Program Supervisor

*Jason Fritz*

*7/9/14*  
 \_\_\_\_\_  
 Date

#### REVIEWED BY:

*Michael Siega*  
 \_\_\_\_\_  
 Forester

*19 JUNE 2014*  
 \_\_\_\_\_  
 Date

*[Signature]*  
 \_\_\_\_\_  
 District Ecologist

*7/2/2014*  
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 Date

*[Signature]*  
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 Parks Ecologist

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 Date



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Forestry stands and cover types at Holy Hill SIATA

